What is Tensor?

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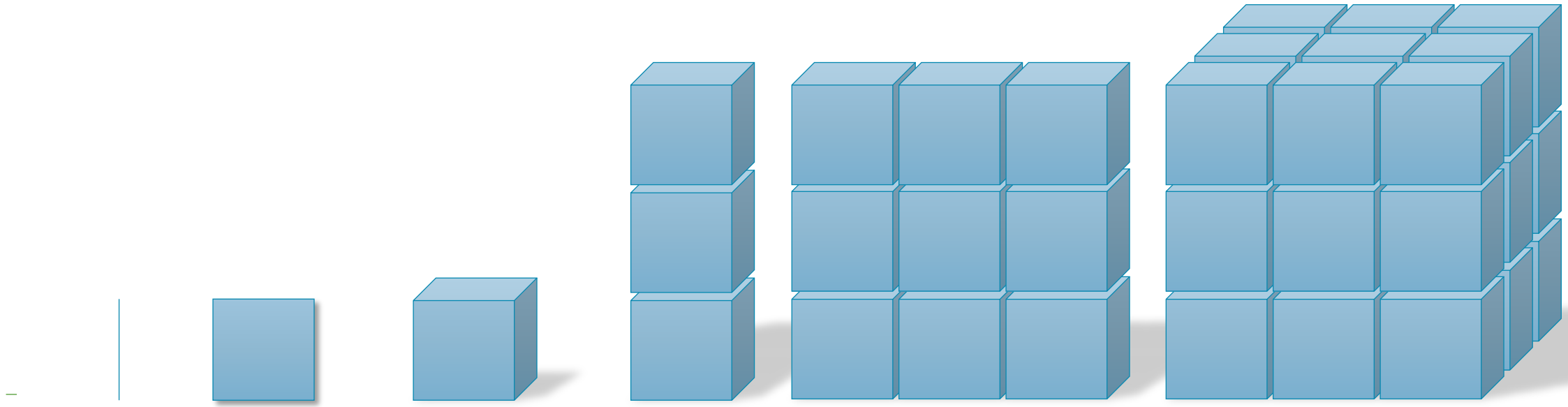
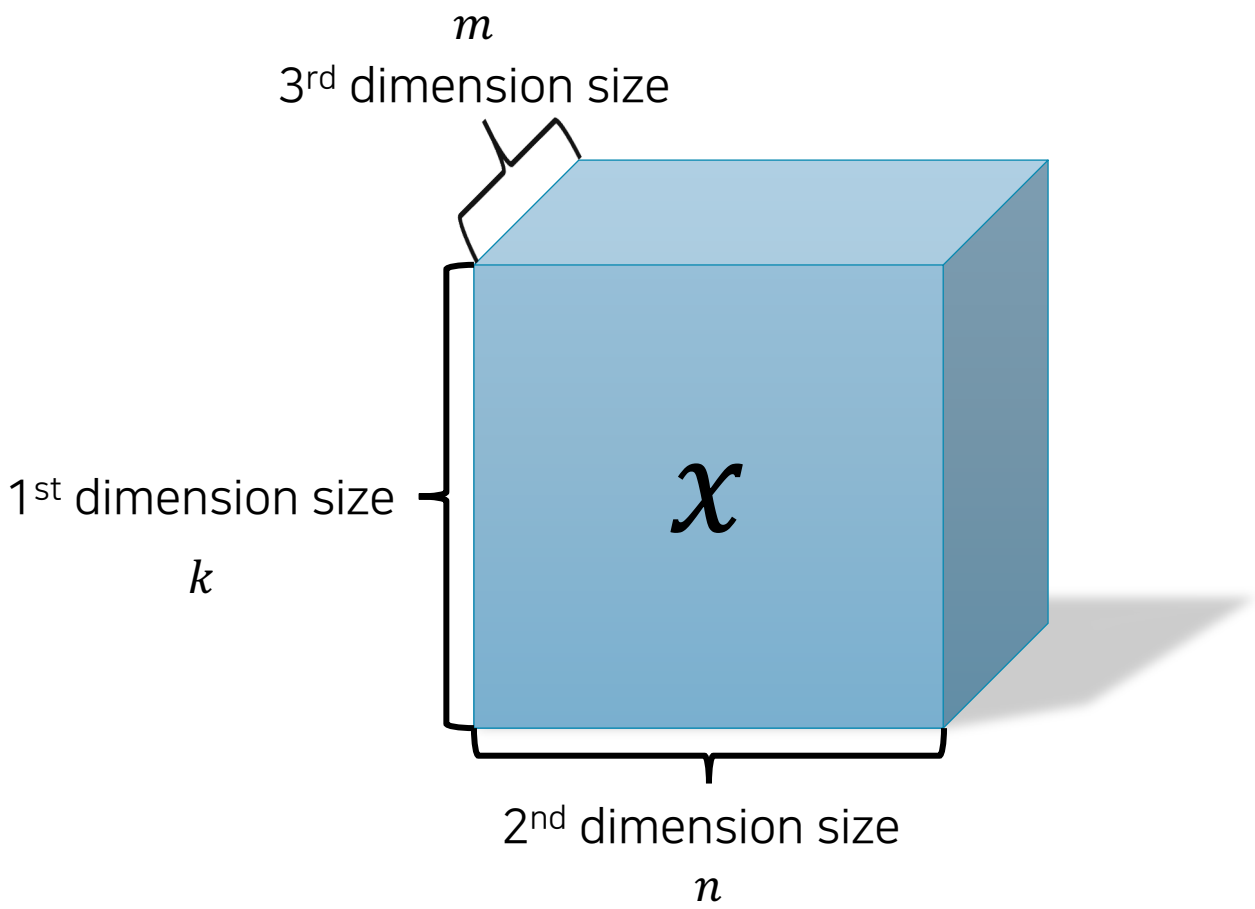
Tensor?



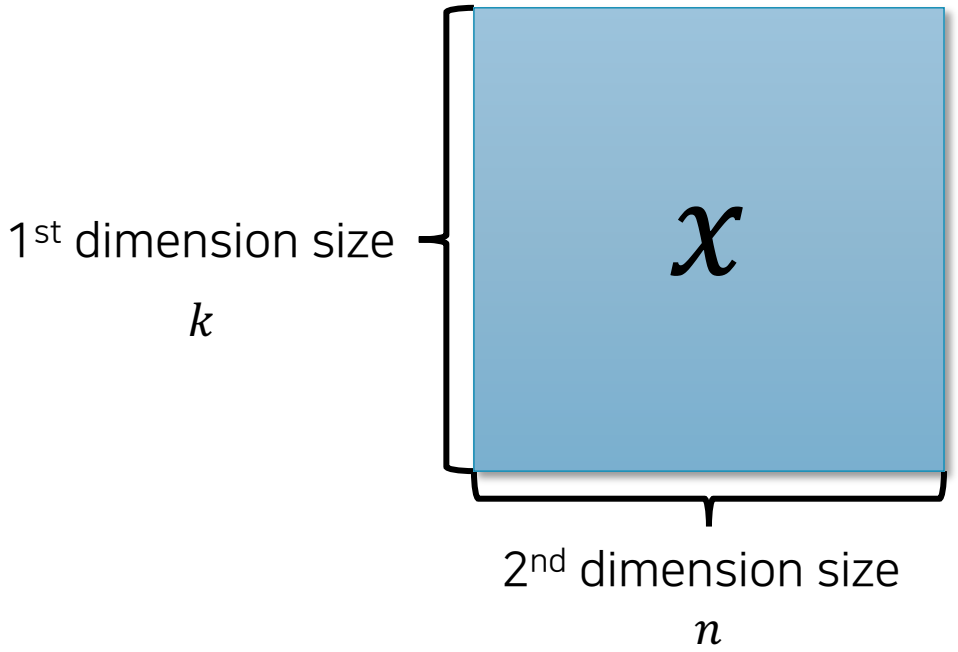
차원	0D	1D	2D	3D	4D	5D	6D
명칭	scalar	vector	matrix	tensor	tensor	tensor	tensor

Tensor Shape



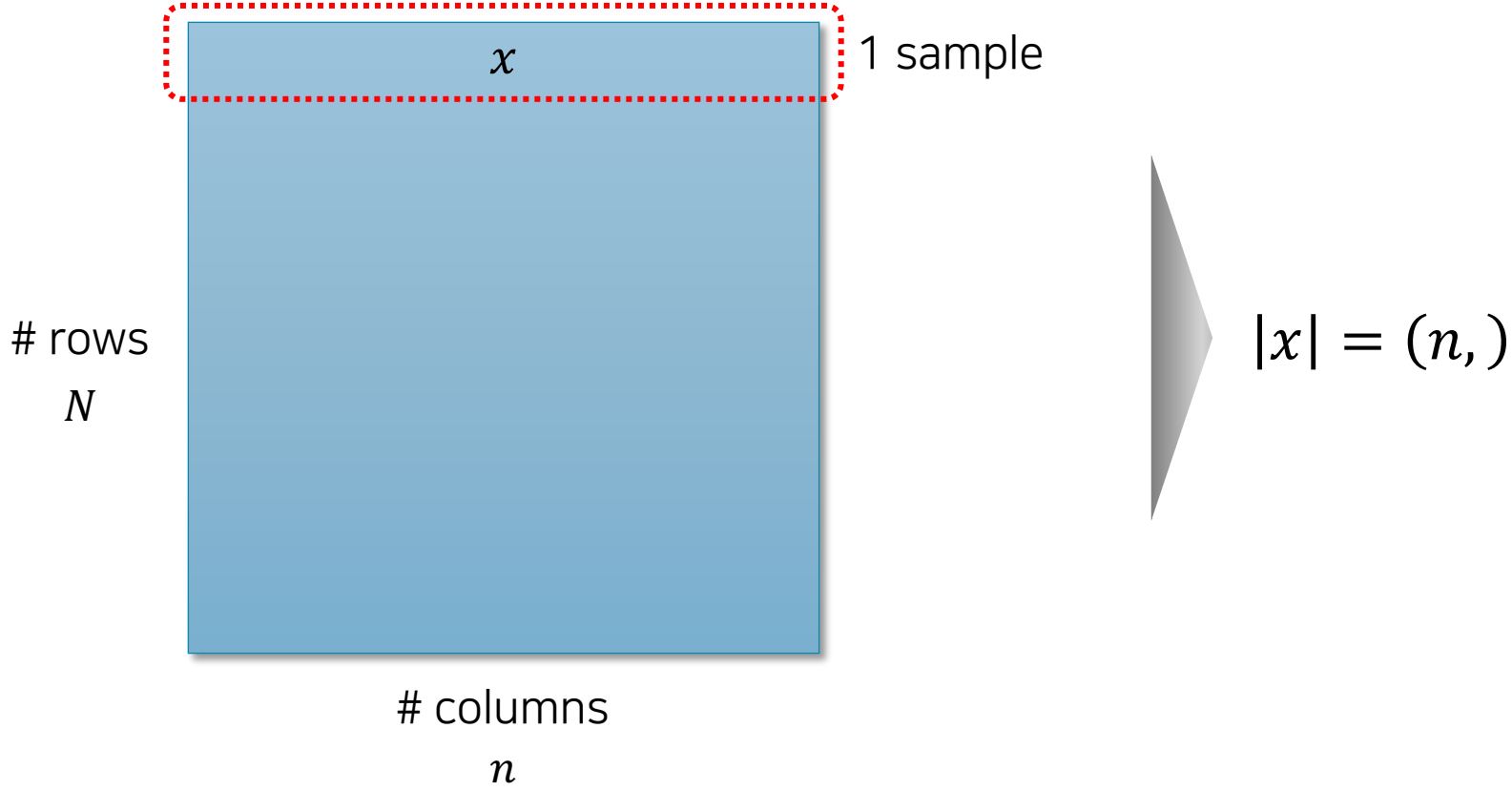
$$x \in \mathbb{R}^{k \times n \times m} \quad \Rightarrow \quad |x| = (k, n, m)$$

Matrix Shape

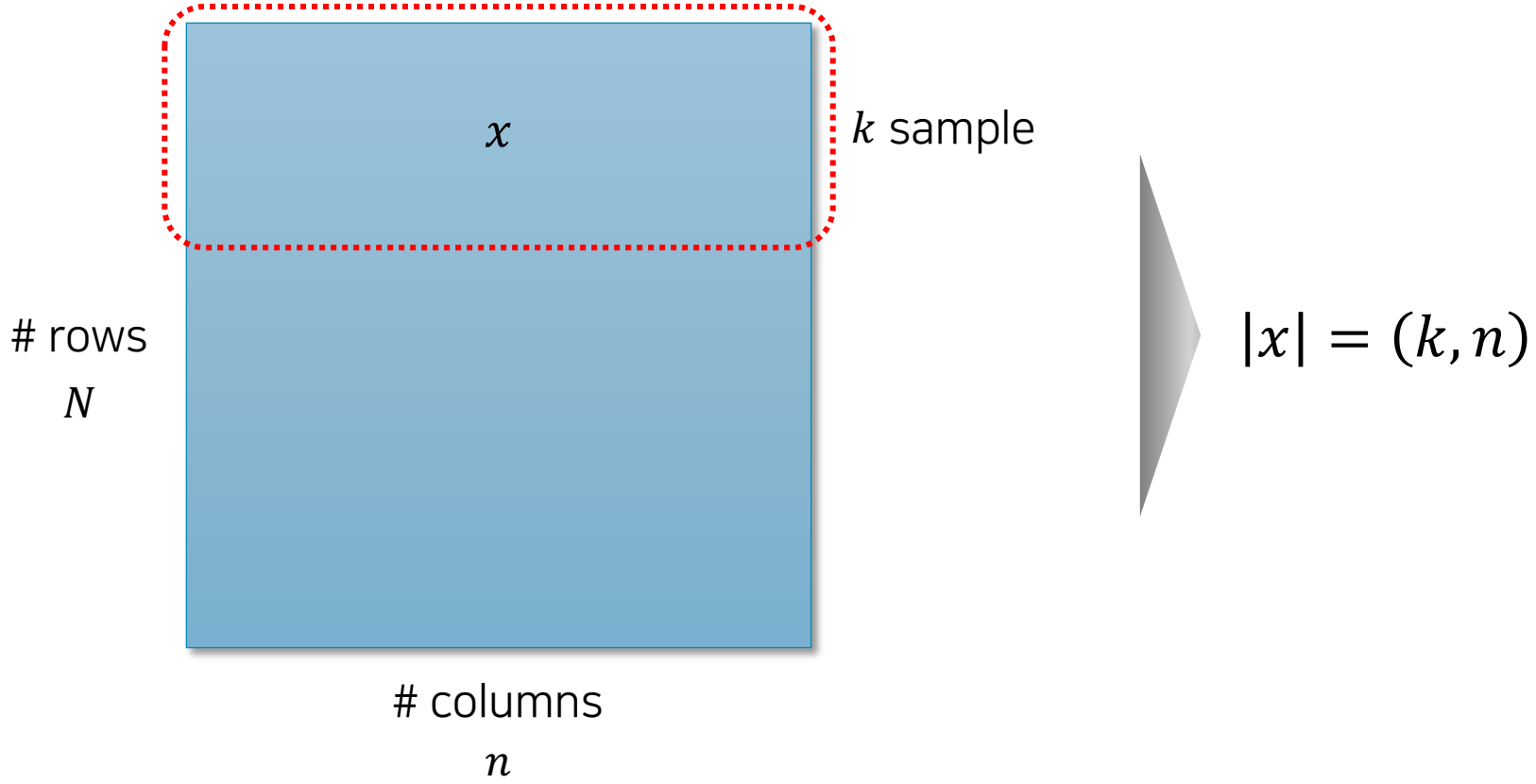


$$x \in \mathbb{R}^{k \times n} \quad \Rightarrow \quad |x| = (k, n)$$

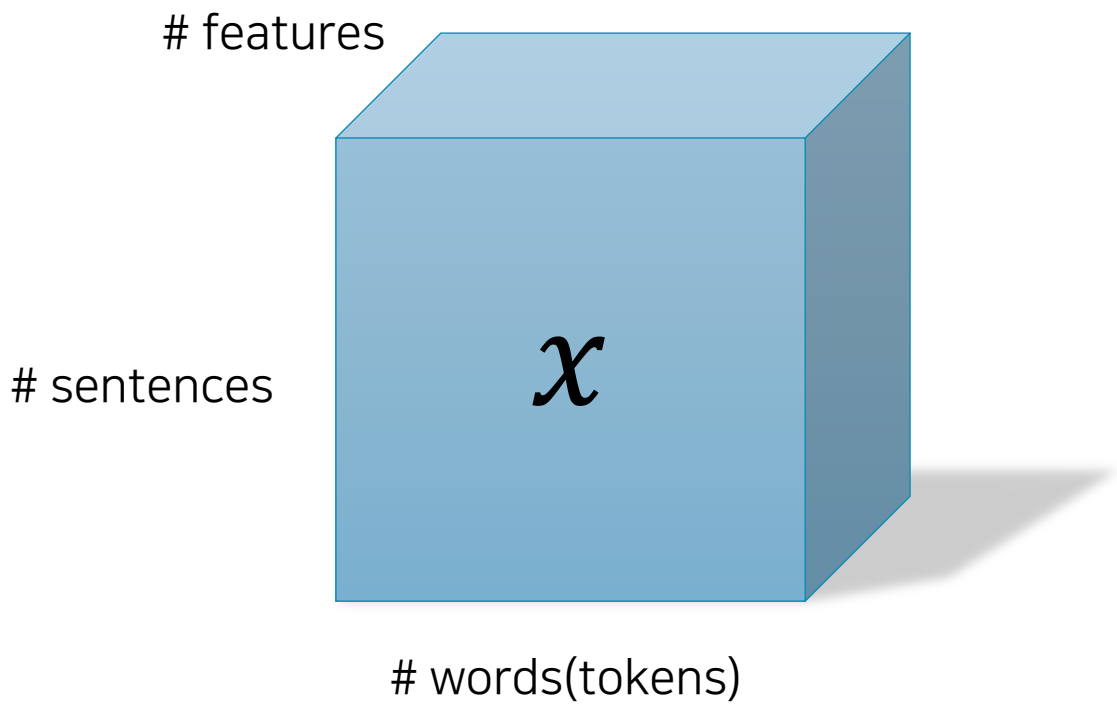
Typical Tensor Shape: Tabular Dataset



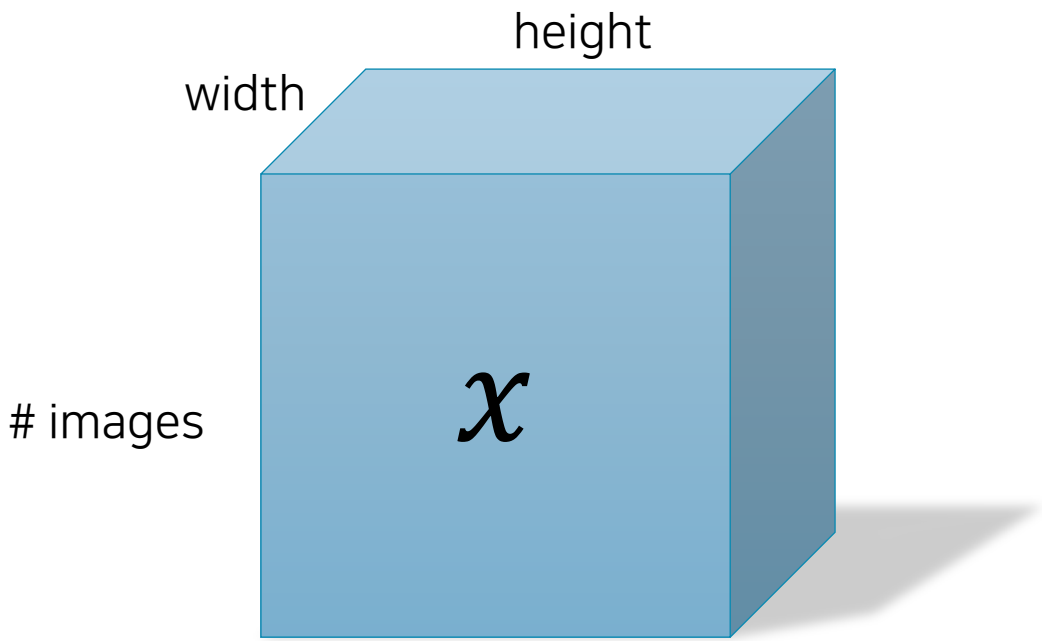
Mini-batch: Consider Parallel Operations



Typical Tensor Shape: Natural Language Processing



Typical Tensor Shape: Computer Vision (Grayscale)



Color

Grayscale

Typical Tensor Shape: Computer Vision (Color)

Color

Grayscale

$\#\text{images} \times$

channels

height

width

x